

almost white in a poor light, and the upperparts are very gray, with scarce a tinge of greenish.

Among the large series of Yellow Warblers before me I find four from Southern Arizona\* and one from Western Texas (Frontera) which are referable to *sonorana*. A Colorado example is a fair intermediate between *sonorana* and *morcomi*. Typical *morcomi* is represented from Utah, California, Lower California, and Alaska. I also have two specimens from Sonora, but both were taken early in the season and doubtless were migrants bound further north.

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## NOTES ON THE BIRDS OF FORT KLAMATH, OREGON.

BY DR. J. C. MERRILL, U. S. A.

*With remarks on certain species by William Brewster.*

In the fourth volume of the 'Bulletin' of the Nuttall Ornithological Club, † Dr. Mearns published a list of the birds of Fort Klamath, based upon the observations and collections of Dr. H. McElderry and Lieut. W. Wittich, U. S. A. The following paper is the result of my own collecting at the same place from September, 1886, to August, 1887, only such species as were personally observed or obtained ‡ by myself being recorded. These include most of the land birds mentioned in Dr. Mearns's list, § and a good many others; the water birds are relatively

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\* Since the above was written Mr. Allen has kindly sent to me for examination seven specimens (three males and four females) taken in Pinal County, Arizona, by Mr. Scott. All of these prove to be *sonorana*. They form part of the series of eleven specimens whose peculiarities were commented on with some detail in the last issue of Mr. Scott's paper (Auk, Vol. V, No. 1, p. 34). In the absence of sufficient material for comparison, Mr. Allen, at that time, very naturally referred them to *morcomi*.

† July and October, 1879, pp. 161-166 and 194-199.

‡ The collection—some two hundred and fifty skins—which I made at Fort Klamath is now in the possession of Mr. William Brewster, whose comments on technical points of especial interest are included in the present paper.

§ Except *Zonotrichia leucophrys*, *Pipilo m. megalonyx*, *Melospiza f. montana*, *Agelaius gubernator* and *Falco mexicanus*.

fewer in number, as my opportunities for collecting them were less favorable, and many species that are certainly to be found at the marsh and lake were not obtained.

Other species, not included in either paper, are known to occur about the Fort, but I did not obtain specimens of them. Among these may be mentioned the Mountain and Valley Quails, rare as yet, but said to be increasing in numbers and extending their range; the Pileated Woodpecker, Purple Martin, Sage Grouse, and others. Among the oaks on the western slope of the Cascade Mountains, within about thirty miles, Nuttall's and the California Woodpecker are found, the latter in abundance.

Unless otherwise stated, my observations were made in the immediate vicinity of the Fort, the altitude of which is 4250 feet. The marsh frequently referred to is at the head of upper Klamath Lake, and about three miles from the Fort; it covers about eighteen square miles. Klamath Marsh proper is at the head of Williamson's River, and twelve miles to the northeast. Modoc Point is twenty miles south on the Linkville road, on the eastern shore of the upper lake. The elevation of Crater Lake, about the same distance in the opposite direction, is a little more than six thousand feet, but the edge of the Crater, which is the locality referred to when the lake is mentioned, is about nine hundred feet higher.

The winter was mild and open until the middle of January, when a severe snow storm began and continued, with few intermissions, until the first of March, the snow at that time being about five feet deep in the valley and very much deeper in the surrounding mountains. During April and May there was much cold and disagreeable weather, cold rains and light falls of snow, and the spring was more backward than usual.

*Æchmophorus occidentalis*. Common in the marsh during the breeding season, and until late in the autumn.

*Podilymbus podiceps*. Nearly as common as the last species, and found with it in the marsh and along the shores of the lake wherever tules grow.

*Urinator imber*. Several seen at Modoc Point in April and August.

*Larus*——. Gulls of at least two species were frequently seen on and near the lake, and occasionally about the marsh, but I did not obtain any specimens. They arrived late in March, singly and in flocks, and remained to breed on the islands in the lake.

*Hydrochelidon nigra surinamensis*. Common summer visitor, breeding in small colonies of six or eight pairs, generally near the edges of the marsh, but apparently placing their nests among tules and broken rushes

surrounded by water too deep to permit approach by wading. The only nest I found was on a floating but almost submerged cow 'chip,' a rather unusual place for a bird's nest; it was at the edge of a grassy pond in the middle of which several Terns were nesting, and it had probably drifted to where I found it. On the top of the 'chip,' a large one, were a few water-soaked grass and tule stalks, and the lower half of the egg was wet, though the bird was on it when found.\*

**Phalacrocorax dilophus cincinatus?** A Cormorant which I took to belong to this subspecies, but of which no specimens were obtained, was quite common during summer on the lake and Williamson's River. Several small flocks were also seen in August at Diamond Lake, the head of the south fork of the Umpqua River, and about fifty miles north of the Fort.

**Pelecanus erythrorhynchos.** Common on the lake, a part of which is called Pelican Bay, from the abundance of these birds which breed on certain islands.

**Merganser americanus.**

**Merganser serrator.** Both of these species are quite numerous.

**Lophodytes cucullatus.** Several pairs seen on the lake and in the marsh; a resident species.

**Anas boschas.** Very common at all seasons, breeding in great numbers in the marshes and in suitable places along the streams. They begin to lay late in March, but the middle and latter part of April is the usual time for incubation to begin. So many nests are destroyed by the Indians, who have an annual egging, by coyotes, and by high water, that fresh eggs may be found until early in July. A nest found June 22 contained eight eggs, out of each of which the duckling was beginning to break its way, making a constant peeping noise. It is, perhaps, uncommon for so many young to hatch at exactly the same time, though I was told that this is often the case with Mallards and other Ducks.

**Anas strepera.** Not common in winter nor during the migrations. A pair was seen in the marsh on May 27, and from their actions doubtless had a nest near by.

**Anas americana.** Common during winter.

**Anas carolinensis.** Common in winter, especially in the smaller streams which are always open, even in the coldest weather. A few pairs remain to breed.

**Anas cyanoptera.** Early in May several flocks of this beautiful Teal arrived, and before the end of the month it was common in the marsh, mostly paired and not at all shy. As I waded about the shallow pools of water which are their favorite resort, they would often allow me to approach within a few feet. A nest found June 3 contained eight fresh eggs, and was placed on a tussock of dry grass, the new green blades surrounding it. When found the female was on the nest, which she left hurriedly; on my return later she had covered the eggs with dry grass stems and blades, completely concealing both nest and eggs. Two nests found

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\* A small white Tern, probably *S. antillarum*, was occasionally seen among the Black Terns, but none were secured for positive identification.

June 15 contained eight and ten nearly fresh eggs. These three nests were well and compactly made of dry grasses, and placed on tussocks; they were deeply cupped, with more or less down for lining, and were much more neatly made than Mallards' nests. The eggs before blowing are of a uniform creamy buff. Few of these Teal are seen after the first of October.

**Spatula clypeata.** Not uncommon during winter, but much more abundant during the migrations. In April mated pairs were almost as common as the Mallards, and in greater numbers than I have ever found this species elsewhere. A few remain to breed.

**Dafila acuta.** Common in winter and until the latter part of March.

**Aix sponsa.** Resident, but most common during spring and summer. A flock of six frequented the head of Squaw Creek, just outside the Fort, during the winter, and a fine male was shot January 29.

**Aythya americana.** Quite rare; but few seen or killed. The Canvasback is sometimes shot here, but I did not see any.

**Aythya marila nearctica.** Abundant from autumn till spring. On June 15 I watched a pair of this species—although it has not been recognized as breeding so far south, their size was certainly too great for *affinis*—for some time in the marsh, and from their actions am confident that they were breeding and had a nest or young close at hand.

**Aythya affinis.** More common than the larger Scaup during the fall and winter months. I do not think that it breeds.

**Aythya collaris.** Very common during winter, more so than either of the Blue-bills, and arriving earlier in the autumn. A few pairs remain to breed in the marsh.

**Glaucionetta clangula americana.** Common from the middle of October until April. Some remain in Wood and Williamson's Rivers, but the majority prefer the lake, which twice during the winter was covered with ice. They were then found in great numbers on all the streams, but most of them returned to the lake as soon as it opened.

**Glaucionetta islandica.** Occurring at the same time and places as the common Golden-eye, but much less abundant. I saw none during the summer on any of the mountain streams, where I looked carefully for this species and for the Harlequin Duck.

**Charitonetta albeola.** One of the commonest Ducks during winter, and found everywhere.

**Erismatura rubida.** A not abundant winter visitor; apparently does not breed.

**Chen hyperborea.** During the autumn of 1886 and spring of 1887 most of the Snow Geese migrated east of the valley in which the Fort is situated. A few were seen, but they were decidedly rare in comparison with the White-fronted and Canada Geese.

**Anser albifrons gambeli.** Very common in April, the main flight occurring between the 20th and 30th, and many flocks stopping to feed in the grassy meadows bordering the marsh. The upper part of the valley is enclosed on the west and north by the main divide of the Cascade Moun-

tains, and on the east by a spur from the same range, all averaging a height of over 6500 feet. On stormy days, if the wind was not blowing from the south, Geese flying low up the valley had great difficulty in rising sufficiently to cross the abrupt divide, and most of them would return to the marsh and its vicinity to wait for a more favorable opportunity. At such times Geese of this and the next species gathered by thousands and afforded great sport. The immense numbers of these birds that migrate through Western Oregon cannot be appreciated until one has seen their spring flight, which, I am informed, extends in width from the coast inland about two hundred and fifty or three hundred miles. About fifty of this species were seen at the marsh on May 23, and twenty on May 27 and June 3, after which none were observed; their remaining so late excited general remark among the settlers.

**Branta canadensis.** This was the only Goose that remained in the valley during the winter. It breeds in considerable numbers. Many of the young are caught by Indians, and are easily domesticated. A few were kept at the Fort as pets; they were perfectly tame and fearless, flying from place to place for food, and sometimes circling around for an hour at a time for exercise. When old enough to breed they usually build their nests on the edge of Fort Creek or Wood River, sometimes within the Fort, at others two or three miles distant. When the female is sitting the gander is generally not far away, and a call of his mate, when her nest is approached, promptly brings him. At such times he generally flies directly at the intruder, whether man or dog, and unless dodged will strike a heavy blow.

**Branta canadensis hutchinsii.** This form migrates earlier in the spring than does *minima*, and is somewhat less abundant. These two birds are called Black Brant by the settlers, who call the White-fronted Goose Brant. They did not seem to know the true Black Brant, *B. nigricans*, nor did I see any.

**Branta canadensis minima.** Very common during the latter part of April. While at Fort Klamath I examined a large number of this group of Geese. Of *occidentalis* I saw none, although they are doubtless to be found here. *Canadensis* seemed to be typical. Most of the *hutchinsii* and *minima* were well marked, and could be easily identified. The chief variation in the latter was in the white collar, which was sometimes hardly perceptible; the abrupt demarcation between the dark and white in the anal region was very constant and striking.

**Olor** ——. Swans, probably of both species, are not rare during the migrations, and are often seen on the lake. On February 13, and for two or three days thereafter, flocks were seen flying north up the valley; this was said to be extremely early for their spring flight.

**Botaurus lentiginosus.** Common in the marsh, where in April and May their 'pumping' is heard on all sides, and where they breed plentifully.

**Ardea herodias.** Resident, but most common in summer.

**Ardea egretta.** A few seen in summer. One passed the winter on Wood River.

*Ardea virescens*. One of these Herons was seen at Crooked Creek May 4.

*Nycticorax nycticorax nævius*. Breeds abundantly in the marsh.

*Grus mexicana*. Sandhill Cranes are rather common in spring and autumn, arriving late in March, and several pairs breed in the marsh. They are more common, however, on Klamath Marsh.

*Grus canadensis*. A female was taken June 10, the dimensions of which were as follows: length from base of maxilla, 28.50; tarsus, 6.75; wing, 16.50; tail, 6.00; middle toe, 3.00; bare skin on forehead dark reddish; iris light brown; tarsi and feet black. The bill had been shot off within an inch of its base, and the tongue was distorted; the injury had healed entirely, and the bird was in fair condition, but the ovaries were undeveloped and it would probably not have bred this year. It was first seen in a marshy pool just outside the Fort, and was so small that I did not identify it as a Crane until I had approached it within thirty yards and could distinctly see the bare reddish skin on the forehead. It flew away uttering its characteristic note, but soon came back, and on returning with my gun I had no difficulty in shooting it.

*Porzana carolina*. Breeds commonly in the marsh. A nest found May 27 was among water grass near the edge of a shallow pool, and was supported by the stalks of the grass; the eggs were raised about six inches above the water, but the foundation of the nest was wet; it was composed entirely of the dead stalks and blades of the grass, and was rudely arched over with growing blades of the same. It contained twelve eggs from which the young would have soon appeared, and which average  $1.26 \times .88$ . Another nest containing nine nearly fresh eggs was found June 15; in situation and construction this was like the other.

*Fulica americana*. Common in the marsh, especially in the deeper parts near the lake. Breeds abundantly.

*Phalaropus tricolor*. Common during the migrations, a few pairs remaining to breed. On June 22 I watched a pair for some time. The female on my approach flew several hundred yards to meet me, circling around and occasionally uttering the usual cry. The male was flushed, and showed much solicitude when I came near a certain place, where after some search I found the nest, containing broken shells of three eggs from which the young had recently escaped. It was placed in a low tussock of marsh grass, well hidden by the fresh green blades, and composed of dead stalks and blades of the same.

*Gallinago delicata*. Very abundant in spring and fall; some pass the winter along the edges of the smaller streams, and many remain to breed. Their bleating is heard from the latter part of April till the middle of June, most frequently about sunrise and sunset, but occasionally at all hours of the day and night. A set of four eggs was brought to me on June 3. The nest was placed in a tussock of grass growing in a marshy place near Wood River, and consisted merely of a few blades of grass, both dry and green, forming a shallow depression. The eggs average  $1.61 \times 1.10$ , and incubation was considerably advanced.

*Totanus solitarius*. Specimens taken May 12 and August 16.

**Totanus melanoleucus.** Two seen April 23, and at intervals for two or three weeks. They return early in August and are rather common.

**Symphemia semipalmata.** One pair at least bred near the edge of the marsh, but I was unable to find the nest. My search for it seemed to disturb the parents very much, and about the last of June they suddenly disappeared, probably removing their young soon after they were hatched. Wishing to secure the entire family I did not shoot the old birds, which were probably the new *inornata* form.

**Bartramia longicauda.** A pair seen near the marsh, and the male shot, June 4. A pair with three nearly grown young were seen in the same locality on July 18, and Captain Bendire informs me that he also observed this species at Fort Klamath. The recognized range of the Bartramian Sandpiper is considerably extended by these records.

**Actitis macularia.** Common summer visitor.

**Numenius longirostris.** First seen March 28, and common by the middle of April. Breeds, but said to be less common in summer now than formerly.

**Ægialitis vocifera.** One of the earliest migrants to appear, and breeds abundantly. First heard March 8, and became common three or four days later.

**Dendragapus obscurus fuliginosus.** Generally distributed among the pines, but not abundant. Their 'booming' began about the latter part of March and continued until May.

**Bonasa umbellus sabini.** Common in the valley, especially in aspen groves.

**Pediocætes phasianellus columbianus.** Not uncommon in the valley, and said to be yearly becoming more abundant.

**Zenaidura macroura.** Common summer visitor, arriving early in May.

**Cathartes aura.** Common, first seen late in March and within a week was abundant; breeds commonly.

**Circus hudsonius.** Common resident.

**Accipiter velox.** Rare summer visitor.

**Accipiter cooperi.** A pair seen at Beaver Meadows, July 9.

**Accipiter atricapillus striatulus.** Frequently seen during the autumn and winter; breeds.

[An adult male, taken March 11, is perfectly typical of the above form.—W. B.]

**Buteo borealis calurus.** Rather common in summer. Several were shot in and about the Fort where they kill many chickens.

**Buteo swainsoni.** Several taken in the spring; breeds.

**Archibuteo lagopus sancti-johannis.** Appeared early in November, and during the winter was very abundant on the marsh. The stomachs usually contained field mice.

**Aquila chrysaëtos.** A common resident, but hardly as numerous as the next species.

**Haliaëetus leucocephalus.** Common resident, especially numerous near the lake. All of the nests I found were placed at or near the tops of tall

dead pines. One nest near the Agency was built and occupied by Ospreys in 1886, and by a pair of these Eagles in 1887. Three nests examined between June 15 and 20 contained each two young nearly as large as the parents.

**Falco peregrinus anatum.** Resident and not uncommon.

[A female, shot March 16, 1887, has the top of head slaty brown, about uniform with the back, but Mr. Ridgway, who has examined the specimen, writes me that it is "not nearly dark enough for *F. p. pealei*," and adds, "we possess very much darker specimens from eastern localities."—W. B.]

**Falco columbarius.** A fine male was shot April 24 while chasing a Sparrow. Early in August many small dark-colored Hawks, probably *suckleyi* were observed along the shores of Diamond Lake, leisurely migrating southward in families of five and six.

[The male above referred to does not in the least approach *suckleyi* but, on the contrary, is rather paler than average eastern specimens of *columbarius*.—W. B.]

**Falco sparverius.** Common summer visitor, arriving early in April and nesting in Woodpecker holes near the tops of the highest pines.

**Pandion haliaëtus carolinensis.** Common, especially on Williamson's River.

**Asio wilsonianus.** Rather common. Their eggs are usually deposited in an old Magpie's nest.

**Asio accipitrinus.** Common in the marsh in autumn and winter. In one specimen a pellet ready for regurgitation contained ten nearly perfect skulls of a shrew, a species of which, and field mice, were nearly always found in the stomachs.

**Nyctala acadica.** A male taken in an open shed on February 21. About the middle of April the curious notes of this Owl were frequently heard just outside the Fort.

**Megascops asio kennicotti?** Heard on several occasions and well known to the settlers, but I was unable to obtain any specimens.

**Bubo virginianus subarcticus?** Rather common resident. No specimens obtained.

**Glaucidium gnoma.** Common resident. One captured February 21 had just struck at a Robin and was struggling with it on the ground. It is said to be especially abundant in summer at Modoc Point, and to feed upon a lizard that is common there; I have also found fragments of field mice in the stomachs. Insects, however, and especially grasshoppers, constitute the greater part of its food when they can be obtained; when the Owl is searching for these the smaller birds pay little attention to it, even if it happens to alight near them.

(To be continued.)